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ABSTRACT

The study presents the results of a cost-benefit analysis, comparing the private economic benefits with the private economic costs inherent in a two-year registered nurses program. The basic data were the result of a questionnaire administered to the class of 1971-73, the business office, office of student services, the Dean of Nursing and Health Occupations, State Employment Service, and publications from the Bureau of Labor Statistics. The study investigates such variables as instructional costs, foregone income, income prior to entry into the program, and starting salary on graduation. In addition, student opinions were used in three basic areas: first, whether the benefits exceeded costs; secondly, job satisfaction; and finally, their evaluation of their training. Ninety percent of the respondents felt that the economic benefits derived from their education exceeded the economic costs. Tables display the data which are also discussed in the report. (Author/NJ)

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PRIVATE ECONOMIC BENEFITS

VS.

PRIVATE ECONOMIC COSTS

OF

ASSOCIATE DEGREE NURSING STUDENTS

CLASS OF 1971-73

MILWAUKEE AREA TECHNICAL COLLEGE

(VT-102-176)

CE 005 351

Prepared Under A Grant From
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Fred Mueller

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INTRODUCTION

The Milwaukee Area Technical College agreed to participate in an experimental Cost-Benefit Study on Associate Degree Nursing students. The following presentation is the result of that study. In keeping with the very general guidelines laid out by Mr. R. Krogstad of the State of Wisconsin Board of Vocational, Technical and Adult Education this study is a comparison of the Private Economic Benefits vs. the Private Economic Costs inherent in a two-year registered nurses program.

The basic data used in this report was the result of a questionnaire sent to the class of 71-73, MATC data from the business office, office of student services, placement department, the Dean of Nursing and Health Occupations, State Employment Service and publications from the Bureau of Labor Statistics. The study attempts to measure the benefit-cost relationships by investigating the following variables:

A. Benefits

1) Income prior to entry at MATC
2) Earnings while attending MATC
3) Subsidies received as a result of enrollment at MATC
4) Starting Salary
5) Federal and State Income tax
6) Salary in May 1974 and taxes thereon
7) Other Income earned as a direct result of training

B. Costs

1) Student Instructional Costs
2) Auxiliary School Costs
3) Foregone Income
4) MATC's Instructional Costs

In addition, other variables have been included as correlaries to the study. Student opinions were used in three basic areas; first, whether the benefits exceeded costs; secondly, job satisfaction; and finally, their evaluation of their training at MATC.

Some data was not used in this study for reasons outlined in the discussions that follow. Observations are included in each section concerning the writer's opinion as to the validity of the items under discussion. In general, the observation can be made that personal contact and interviews for this type of

survey would be necessary to clarify respondents replies. For example, the matter of taxes was thoroughly confused, and hence a combined Federal and State tax rate of 15 percent on gross income was assumed as being reasonable in order to bring consistency and a measure of reliability into the calculations.

GENERAL DATA

In most studies it is useful for the reader to receive a brief profile of the respondents. In reference to this section of the study, one assumption was made, namely, that if the salary questions were answered in terms of hourly rates, it was assumed that the respondent was a part-time employee. This data was then projected to an annual salary equivalent. The other data was gleaned from the questionnaire and MATC files.

The following data is a composite profile of the Associate Degree Nursing Class that began its studies in the Fall of 1971 and graduated in June, 1973.

1. The original 1971 enrollment was 179, dropouts during the two year program totaled 36, with 143 graduating in June of 1973.
2. In the graduating class were 13 males and 130 females.
3. A total of 50 respondents are included in this survey. Of these 6 males and 44 females responded.
4. Of the respondents, 35 or 70% were employed full-time, while 15 or 30% were working part-time in the profession.
5. Of the respondents, 64% were married, 32% were single, while one person (2%) was a widow. One respondent failed to answer the question.
6. The majority of the fifty respondents were employed within MATC's geographical boundaries. Specifically 78%, or 39 respondents were employed within the district's area, 20% within the State of Wisconsin and one out of State.

Of vital importance to this study is the entrance requirements for registration into the associate degree nursing program. The high school preparation and the personal interview requirements go a long way in assuring academic competencies and personal motivation that results in a high completion rate and an almost perfect record in State Board of Health examination results.

MATC, in general, applies an open-door policy in its admittance procedures. The MATC Associate Degree Nursing students do have high school academic requirements to meet for their admittance to the program and these requirements are more stringent than most of MATC's other programs of instruction. They are as follows:

1. One year of algebra
2. One year chemistry
3. One year biology
4. English, three years
5. One year geometry

In addition to the above, each eligible applicant has a personal interview. Each applicant must present a birth certificate and character references; and must be in good health as evidenced by a medical examination and proper immunizations. Student admission to this program is based on high school achievement (2.5 minimum average), previous college work, if any, and results of the College Entrance Examination (ACT score of 18). A minimum age requirement of 17 years is also in effect.

A prima facie conclusion from the above would indicate that the entrance requirement and the personal interview of each applicant should result in the acceptance of "above average students" that were highly motivated toward this professional health service field.

NON QUANTITIVE FACTORS

The data presented in this section represents the personal responses of the Class of 73 pertaining to a) economic factors, b) job satisfaction, and c) an appraisal of their training at MATC. In the main these were "check" questions posed to confirm the responses to the questionnaire.(1) The writer believes that a complete study covering a more detailed analysis of the students appraisal of his current position and training might be very useful in structuring academic programs and industry cooperation as well as judging a cost-benefit relationship.

Private Economic Costs Vs Private Economic Benefits(2)

Question: Regarding economic costs and benefits of your Associate Degree Nursing Program at MATC to you as an individual, in your opinion, do you feel that (check the most appropriate space):

The responses were as follows:

	No. of Responses	% of Total
1. Costs very much more than benefits	0	0
2. Costs somewhat more than benefits	2	4
3. Costs equal to benefits	3	6
4. Benefits somewhat more than costs	11	22
5. Benefits very much more than costs	34	68
TOTAL	50	100%

Ninety percent of the respondents felt that the economic benefits derived from their education exceeded the economic costs. However, some individual inconsistencies should be noted. One respondent, a welfare case prior to entry to MATC, felt that her economic independence, as the result of her education was not worth the differential over her welfare payments. On the other hand another respondent gave up a $20,000 per year job to accept a $1[illegible],000 position in the

(1) See Appendix, Tables 8 and 9
(2) See Appendix, Table 10 for sample questionnaire

profession, hence his economic costs far exceed his current benefits with the result that he confused job satisfaction with economic benefits. Several other minor variations can be noted by perusal of individual responses.

Job Satisfaction

Question: How satisfied are you with your present job?

This question probed the respondents on the non-economic factor of job satisfaction. It is apparent that 82 percent of those responding to the question feel that the time and effort expended toward the Associate Degree Nursing career was well worth it. However, it should be borne in mind that MATC's screening process for this program is perhaps the most stringent of all our associate degree programs. Hence the motivation for a public service job was present prior to their enrollment in the program. For example, one of the respondents left a $15,000 position in the year 1971 to train for a position paying $9,200 in 1973. The three respondents that were "very little satisfied" also classed their training as adequate and fair, which may indicate a disillusionment toward their profession and the self-discipline that the nursing profession demands.

Question: How satisfied are you with your present job?

The responses were as follows:

Category	No. of Responses	% of Total
1. Very much satisfied	26	52
2. Somewhat satisfied	15	30
3. Average Satisfied	6	12
4. Very little satisfied	3	6
5. Highly dissatisfied	-	-

Appraisal of Training

Question: How do you rank your training at MATC?

The responses were as follows:

Category	No. of Responses	% of Total
1. Ranks with the best	14	28
2. Good training	18	36
3. Adequate	17	34
4. Fair	1	2
5. Wholly inadequate	0	0

This brief question was employed to elicit a reaction from the respondents relating their academic training with on-the-job requirements. Since they now have had one year of practical experience, a reflection upon their training in the light of their work experience would prove helpful to MATC. Ninety-eight percent of the respondents indicated that their training was adequate or better, enabling them to function in the job setting.

These student opinions surveyed above, while non-quantifiable, can assist educational institutions in evaluating the adequacy of the training. A more detailed independent study of this nature should assist research and evaluation teams in evaluating the somewhat nebulous area of instructional efficiency.

Income Gain

As noted in the Appendix Table I, the Net Income of the respondents prior to entry to MATC averaged $3,876.96 per year. The gross income of the job entry positions immediately after graduation averaged $8,619.60. An average gain of 122.1% over the two year period. Pre-education earnings ranged from $0 to $15,000, while the starting salary range was $6,838 to $10,849. Thus, from a high-school graduate with no previous employment to a sale man who earned $15,000 per year, the 1973 class presents a wide range of motivated persons, many of whom left good solid paying positions to enter the profession. While, on the average the group showed a substantial increase in earning power due to their training, some individuals sacrificed substantial incomes.

Earnings While at MATC

As indicated in the preliminary breakdowns of the constituents factors of economic benefits, the respondents to the questionnaire replied to this factor. It was found that the average annual earnings for MATC nurses in training were $639.80, and totaled $1,279.60 over the two year period. These figures are misleading in the case of the associate degree nursing students. The second year of their training is geared heavily to clinical experience out in the hospitals, which is very time consuming in terms of travel time and extended clinical time necessary to earn the college credits. Therefore, the bulk of this part-time employment income will be found to occur in the first year of their programs, thus potentially affecting the present value of these benefits.

As to the validity of this item as a benefit derived from the attendance for the two year associate degree program, this writer feels that, at best, the sums earned are an offset to the students economic costs of obtaining an education. It is in this context that these figures are used in this report. However, it may be more proper in the case of MATC students that this item be eliminated altogether. In the metropolitan Milwaukee area part-time jobs are available to all who wish to

take them, whether they are associate degree students, non-students, or plain "John Q. Public". They are not hired because of their school attendance but because of the nature of a metropolitan job market. A few of the respondents did obtain part-time employment in nursing related jobs, generally on weekends, that may be attributed to their enrollment in the nursing program, however, these were low-level jobs available to any high-school graduate without any training in the job areas.

Subsidies While at MATC

This item represents all forms of student financial assistance while at MATC during the two year period. This includes MATC student budgeted work programs, Federally funded student financial aids and a limited program of student fellowships and scholarships donated to MATC students from community donors. It also includes Social Security benefits, welfare assistance, unemployment compensation, rehabilitation support, and other forms of city, state and federal assistance designed to aid an individual in obtaining an education. Excluded are any loans made to students on the grounds that the principal sum must be repaid. If one expected to be exactly correct in this item, only the amount of an "interest subsidy" on the loans could be included. This would prove to be extremely difficult to obtain since loans to nurses have special provisions for repayment and forgiveness of the principal sum depending upon the area of employment after graduation, and may extend the repayment periods over terms of five to ten years, with the possibility of full forgiveness of all debts under varying circumstances.

Starting Salaries (1973), Taxes and Net Income

The June, 1973 graduating class began their professional assignments with an average annual starting salary of $8,619.60. This figure includes the earnings of part-time employment extended to an annual wage level as explained in the critique of this paper. As it must to all men, taxes offset this gross income so that their net income after taxes amounted to $7,326.66. This assumed a tax deduction for both Federal and State income taxes at a 15% combined rate ($1,292.94).

The reader, in examining the data on economic benefits presented in the Appendix will note that the income of the respondents prior to entry into the

associate degree nursing program was $3,876.96, with taxes of approximately $581.55, resulting in a "take home pay" of $3,295.41. Assuming that the functional positions remained the same over the two year period and that this average wage increased at the average increase in wages, compounded, the wage at the end of 1973 would have been $4,125.19, with a net after the 15% tax rate of $3,506.40[1] This figure could have been used in this study as the "foregone income" classified in economic costs of going to MATC. Arguments can be made for the use of these figures in this context.

It should also be noted that prima facie evidence brought out by the taxation assumption and the institutional costs indicate a payback figure of 2.73. That is, the institutional costs divided by the combined first year tax indicated that the costs to MATC are recovered by the taxing units in two years and nine months. Naturally a more thorough definition of tax receipts by the taxing units that support MATC would have to be made in order to come up with a meaningful payback period. This would really necessitate an economic base study of MATC and its contribution to the metropolitan area.

Current Income

The final columns in the table on economic benefits relate to the current income of the 73 class approximately 10 months after graduation. The respondents average income was $9,374.52 with a range of $7,358 to $12,000. This was an annual increase of $754.92 on the average, indicating an 8.75% wage increase. The net after a 15% combined income tax rate left the respondents with $8,015.41 annual salary. This represents a gain in net income after taxes of $688.75. However, with a decrease in purchasing power of 6.7 percent between August, 1973 and August, 1974[2], the increase in real income terms amounted to $642.60.

Miscellaneous Monetary Gains

This private economic benefit exhibited a very minor influence in the income pattern of the respondents. Only four respondents reported other income earned in the nursing profession over and above their basic salaries. Naturally, when

(1) Bureau of Labor Statistics, Handbook of Labor Statistics, Wage increase May 71-72, 6.4%
(2) Bureau of Labor Statistics, Cost of Living Index, 1967, 100.

averaged over the 50 respondents this amounted to a mere $47.07 per nurse. It would appear that "moonlighting" within the profession is at a bare minimum and in three of the four instances it appears that this activity was used as a supplement to part-time employment. Since this item is relatively insignificant, it was ignored in the formula computations that follow.

PRIVATE ECONOMIC COSTS

According to the student questionnaire, the items listed in this section are designed to indicate "out of pocket" student costs of obtaining the associate degree. The writer has included in the appendix a summary table of institutional costs estimated by MATC's business office (Table 7). This latter data is presented only as an adjunct to this study and points up a few interesting side comments concerning the value of the program in terms of recapturing vocational expenditures.

Student Costs in the Appendix Table 2 encompasses student outlays for fees, tuition, books, supplies and other necessary direct costs. It will be noted that the range in costs reported by students was $40 to $1,400 for the two year period. The mean two year cost was $516.80 or $258.40 annually. This compares to the estimated student costs of $202.50 annually prepared by the Student Services Department of MATC for the Associate Degree Nursing Program.

Auxiliary School Costs also noted in the Appendix Table 2 comprises the respondents estimated two year costs for room, board and travel. The latter cost would be a more significant component for these students than other students enrolled at MATC since their second year clinical experiences requires travel to hospital, clinics and other medical installations in the greater Milwaukee area. The range in costs was $0 to $7,880. This would indicate that a great deal of confusion existed in the minds of the respondents as to these components of costs. It can be assumed that in the zero category the student had to receive at least transportation expenses from parents, while in the top bracket this may have included living expenses for married students. The annual average of $866.80 per student would appear to cloud the statistics from the realities of individual needs and circumstances.

The Foregone Income column as represented in Table 2 in the Appendix is the respondents estimates of the income lost while attending MATC. For the high school graduate this should have been zero, however, it is apparent from some of the individual responses that their part-time employment wages were used. On the other hand, one respondent at the top of the range evidently was highly motivated to a

service profession and job satisfaction rather than his income considerations. He left a sales position of $15,000 annually and estimated that his earning potential would have been $20,000 annually over his period of education. On the other hand one suspects another respondent's data, who, as a student and prior to entry to MATC, was a welfare recipient who reports an outlandish figure of foregone income in response to this question. The composite result of the respondents estimate indicated a foregone income of $9,679.92 over the two year period ($4,839.96 annually).

The writer has employed the respondents estimate in the calculations of the cost-benefit relationships. However, a case can be made for using his income as reported in 1971 when he/she entered the associate degree program and adjusting these figures for wage increases as reported by the Bureau of Labor Statistics. This was indicated in a previous section. It is obvious that several alternatives could be made available here to strengthen data reliability and these should be considered in future plans. More stringent parameters and guidelines would have to be established to confine the respondents replies into more realistic estimates.

The Summary totals as given in the same table indicate a private cost of $5,965.26 annually or $11,930.52 over the two year period. Of greater significance would be the range of $300 to $41,100 over the two year period. Obviously at both ends of the range are very exceptional cases, but the average appears to be realistic.

Institutional Costs

Included in the Appendix, Table 7 is a summary of institutional cost allocations to the Associate Degree Nursing department submitted to the writer by MATC's business office. The per student cost of instruction includes teachers' salaries, supplies and expense, capital equipment purchases (but no cost of depreciation allocation of previous capital commitments) and an indirect cost allocation of 49% of these direct costs. The costs of related instruction is an allocation from the General Education Division that services the nursing program in the areas of English, Psychology, Physical Education, Speech, Economics and Sociology. A total estimated institutional cost of $3,535.46 for the two years is composed of costs of $1,602.36

for the 71-72 school year and $1,933.10 for the 72-73 term. These costs must be considered estimates, since a reorganization of the accounting system is still in process at MATC and the above figures were gleaned from previous accounting records which were not designed for a responsibility accounting system.

COST BENEFIT RELATIONSHIP

The Control Group

In order to appraise an alternate to the two-year associate degree nursing program, a simulated group of high-school graduates for 1973 was taken. These graduates were assumed to be socially motivated to work in a hospital setting. This would approximate the motivations of those students entering the associate degree nursing program.

To obtain income data for this group, six major hospitals in the Milwaukee area were contacted. They were: Milwaukee County General Hospital, St. Joseph's, St. Luke's, St. Mary's, Lutheran and St. Michael's. The hourly rates in 1973 ranged from $2.44 to $3.76 per hour. This rate was then multiplied by 2,000 hours (50 weeks x a 40 hour week) allowing for a two week without pay vacation. These figures were also used in the data for those associate degree respondents that indicated hourly rates rather than annual salaries. The average salary was then used in the computations for the final rate of return as illustrated in Tables 5 and 6 found in the Appendix.

It should be noted that one of the hospitals polled reimbursed the beginning employee at a rate that was 54% above the lowest rate paid in the city. No attempt was made to explain this wide discrepancy, since this is one of two hospitals whose general wage and salary policies exceed the general patterns in the metropolitan area.

Cost Benefit Analysis

Tables 5 and 6 in the Appendix are resumés of the computations necessary to complete the cost-benefit relationships for our nursing students. Two ratios have resulted.

First, the payback period. This ratio answers the question how long will it take for the student to recover the costs of the two-year educational program. The private cost and private benefits are illustrated in Table 3. After taking into consideration the economic benefits gained over the control group's benefits,

the Milwaukee Area Technical College Nursing Students recover the economic costs in 2.87 years.

The second measure employed in this survey was the internal rate of return. This ratio considers the economic costs as an "investment" and attempts to relate this investment to a rate of return that would result in an "income" generated over a period of time. The writer selected a five year time span as being a reasonable period of time in which to measure results. As shown by the computations presented in Table 6 of the Appendix, this rate of return was 23.992 percent.

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TABLE I

PRIVATE BENEFITS

Student	1 Net Income Prior to Entry to MATC	2 Starting Salary (1973)	3 Less Fed. and State Taxes	4 Net Income After Taxes	5 Current Income (1974)	6 Less Fed. and State Taxes	7 Plus Other Income
1	4578	6838		6838	7358		
2	5700	9200		7810	10300		
3	5460	8400		7140	8860		
4		9000		7650	9900		
5		8200		6960	8800		
6	1500	9000		8775	10000		
7		8500	T	8500	8950	T	
8	7000	10000	A	8500	10000	A	
9	6800	8460	X	7191	8900	X	
10	9000	8600	E	7310	9200	E	
11	2000	8832	S	8832	9600	S	
12	4800	8280		8280	8280		
13	6500	8840	A	8840	9152	A	
14	6000	7700	S	7700	9000	S	
15	6000	8460	S	7191	9000	S	
16	2000	8544	U	8244	9612	U	
17	4000	8360	M	7106	9060	M	
18	1200	8500	E	7125	9520	E	
19	1200	8940	D	7599	8977	D	
20	7700	9700		8245	10000		
21		8280	A	7038	9000	A	
22	5600	8064	T	6855	9081	T	
23		8140		6919	8920		
24	3500	8736	1	7425	9776	1	
25	1260	9360	S	7956	9256	S	
26	2000	7800	%	6630	9200	%	
27	4000	8420		7157	9560		
28	5160	7820		6647	9900		
29	7000	10200		10200	10700		
30		10849		9222	10849		
31	4500	7000		7000	7800		1000
32	1300	8320		7515	8620		
33		8835		8754	9665		455
		19					

Student	1 Net Income Prior to Entry to MATC	2 Starting Salary (1973)	3 Less Fed. and State Taxes	4 Net Income After Taxes	5 Current Income (1974)	6 Less Fed. and State Taxes	7 Plus Other Income
34	6000	8100		8100	8760		
35	6000	8400		7140	8640		
36	6000	9732		8272	10560		
37	5500	8460		7191	8544		
38	6500	8710		7403	10140		
39	5200	8736		7950	9609		
40		7960	T	6766	9320	T	
41	7000	9000	A	7650	12000	A	
42	6000	8280	X	7038	8880	X	
43	15000	9200	E	7820	9700	E	
44		8486	S	7213	9776	S	
45		8400		7140	9360		
46	900	8407	A	7146	9027	A	
47	4000	10400	S	8840	10956	S	1920
48	950	7966	S	7966	8850	S	10
49	3840	8045	U	6838	8448	U	
50	5200	8520	M	7242	9360	M	
			E			E	
AVERAGE	387696	861960	D 129294	732666	9374 52	D 140618	4707
			A			A	
			T			T	
			1			1	
			5			5	
			%			%	

20

TABLE II

PRIVATE ECONOMIC COSTS

Student	1 Student Costs	2 Auxiliary School Costs	3 Foregone Income (Two-Year Income)	4 Total Private Economic Costs	6 Earnings While at MATC	7 Less 15% Taxes	8 Subsidies at MATC
1	40	2250	9156	11446	1500		570
2	400	2000	11440	13840			
3	500	400	10920	11820	1200		
4	600	400		1000		T	5280
5	300			300		A	
6	400	2000	20000	22400	400	X	
7					450	E	1540
8	200	800	14000	15000		S	
9	400	2400	13600	16400	4790		
10	500	3000	16000	19500	2500	A	
11	800	360	9600	10760	4000	S	1000
12	800		13000	13800		S	250
13	800	600	16000	17400	1200	U	4598
14	400	7880	12000	20280		M	2200
15	600	2000	16000	18600	5000	E	
16	400	500	12000	12900	1200	D	3200
17	800	1600	4000	6400	1440		
18	1000	5000	12000	18000		A	
19	500	6000	12000	18500		T	
20	400	1600	15400	17400	7700		
21	600	200	18000	8800		1	
22	500	3200	11200	14900	1000	5	4000
23	500	144		644		%	
24	800	3440	11520	15760	500		
25	600	1300		1900	1000		
26	500	400		900			
27	700	400	2520	3630			
28	200	500	11440	12140	300		
29	200	100	14000	14300	1200		
30	400	600		1000			1000
31	1400	1400		2800	5000		
32	500	100	2600	3200			
33	400	3000	4000	7400			1400

Student	1 Student Costs	2 Auxiliary School Costs	3 Foregone Income (Two-Year Income)	4 Total Private Economic Costs	6 Earnings While at MATC	7 less 15% Taxes	8 Subsidies at MATC
34	500	4800	12000	17300	1000		1000
35	800	3200	20000	24000	2880		6000
36	500	800	12000	13300		T	
37	300		11000	11300		A	
38	300	6000	5000	11300	5000	X	
39	500	4000		4500	2000	E	
40	1000	800		1800		S	
41	700	800	14000	15500	500		
42	350	600	12000	12950	620	A	
43	1000	100	40000	41100	6000	S	2000
44	200	600	14560	15360		S	
45	400	2000	16000	18400		U	
46	600	200		800	1500	M	
47	300	106	16640	17046	1600	E	
48	550	1100	10000	11650		D	1400
49	500	5600	8000	14100	2500		
50	200	2400	10400	13000		A	1600
						T	
AVERAGE (YEARLY)	25840	86680	4839 96	596526	63980		37038
						1	
						5	
						%	

TABLE 3

2 Year Costs vs. Benefits
Student Estimates

Benefits		
1973 Starting Salary		$8,620
Less 15% Fed & State Taxes		1,293
		$7,327
Costs		
1971-73 Student Costs		517
71-73 Auxiliary Costs		1,734
		2,251
Less 71-73 Subsidies at MATC		741
		1,510
Earnings at MATC	$1,280	
Less 15% Taxes	192	1,088
Net out-of-pocket		422
Foregone Income	$9,680	
Less 15% taxes	1,452	8,228
Total 2-year Cost		$8,650

TABLE 4

1973 STARTING SALARY
CONTROL GROUP

Hospital	Annual Wage[1]
1	$7,522
2	4,880
3	5,180
4	5,180
5	4,880
6	5,080
Average	$5,455

(1) Based on hourly rates x 2,000 hours of employment (50-40 hour weeks)
Hourly wages in 1973 ranged from $2.44 per hour to $3.7609 per hour.

TABLE 5

ASSOCIATE DEGREE CLASS
VS.
CONTROL GROUP

ASSOCIATE DEGREE				CONTROL GROUP				
Year	Salary	15% Taxes	Net Income	Year	Salary	15% Taxes	Net Income	Associate Degree Benefit
1	$8,620(1)	$1,293	$7,327	1	$5,455(4)	$818	$4,637	$2,690
2	9,375(2)	1,406	7,969	2	5,728(3)	858	4,870	3,099
3	9,843(3)	1,476	8,367	3	6,014(3)	902	5,112	3,255
4	10,335(3)	1,550	8,785	4	6,315(3)	947	5,368	3,417
5	10,852(3)	1,628	9,224	5	6,631(3)	994	5,637	3,587

(1) 1973 Starting Salary of Associate Degree Nursing students

(2) 1974 May, 1974 current income of respondents

(3) Assumes a 5% annual rate of salary increases

(4) Average starting wage of individuals with high school diploma working at entry jobs in a hospital. Year 1 salary is average wage in six largest hospitals in Milwaukee classified as Nursing Assistants. (Salary is starting hourly rate x 2,000 hours annually)

TABLE 6

COMPUTATIONS

Net 1973 Starting Salary	$7,327
2 Year Net Cost	$8,650

Net Benefit of Associate Degree over Control Group - 5 Year Period(1)

Year	1	2	3	4	5
Associate Degree	$7,327	$7,969	$8,367	$8,785	$9,224
Control Group	4,637	4,870	5,112	5,368	5,637
N.B. of Assoc. Degree	$2,690	$3,099	$3,255	$3,417	$3,587

(1) See Table in the Appendix

PAYBACK

Year	Annual Benefit	Cumulative Totals
1	$2,690	$2,690
2	3,099	5,789
3	3,255	9,044
4	3,417	12,461
5	3,587	16,048

Cost $8,650

$5,789 + $2,861 / $3,255 = .87

Payback Period 2.87 Years

RATE OF RETURN (5 Year Period)

Year	Benefit	20% Rate(1)	24% Rate(1)
1	$2,690	.833 = $2,241	.807 = $2,171
2	3,099	.694 = 2,151	.650 = 2,014
3	3,255	.579 = 1,884	.524 = 1,706
4	3,417	.482 = 1,647	.423 = 1,445
5	3,587	.402 = 1,442	.341 = 1,233
		$9,365	$8,569

Rate of Return: 24. - .008 = 23.992%

(1) Source: Present Value Tables

TABLE 7
Associate Degree Nursing
Institutional Costs of Instruction(1)

	1971-72	1972-73
Nursing Department Costs	$451,141.00	$534,274.00
Related Instructional Costs	61,613.00	126,836.00
Total Costs	$512,754.00	$661,110.00
Number of Students	320	342
Costs per Student	$ 1,602.36	$ 1,933.10

(1) Costs included in the figures are salaries, supplies and expense, capital equipment and an indirect cost allocation of 49% of direct costs. Figures are from MATC's business office. The costs of related courses of instruction are estimates based upon a median institutional salary and costs of supplies and expense per student used by the General Education Division in budget computations.

EXHIBIT 8
Student Characteristics

	Number of Responses	Percentages
Type of Student		
1. Part Time	15	30%
2. Full Time	35	70%
Sex of Students		
1. Male	6	12%
2. Female	44	88%
Marital Status		
1. Married	32	64%
2. Single	16	32%
3. Divorced	0	0%
4. Widow	1	2%
5. No Answer	1	2%
Place of Employment		
1. MATC Area	39	78%
2. State of Wisconsin	10	20%
3. Out of State	1	2%

EXHIBIT 9
Student Opinions

	Number of Responses	Percentages
Regarding Economic Costs and Benefits		
1. Costs very much more than benefits		
2. Costs somewhat more than benefits	2	4%
3. Costs equal to benefits	3	6%
4. Benefits somewhat more than costs	11	22%
5. Benefits very much more than costs	34	68%
Job Satisfaction		
1. Very Much Satisfied	26	52%
2. Somewhat Satisfied	15	30%
3. Average Satisfied	6	12%
4. Very Little Satisfied	3	6%
5. Highly Dissatisfied		
Appraisal of Training		
1. Ranks with the best	14	28%
2. Good Training	18	36%
3. Adequate	17	34%
4. Fair	1	2%
5. Wholly Inadequate		

EXHIBIT 10

NAME (Used as a Student at MATC)

_____

Last First Middle Initial

Married Name: _____

Address: _____ (Zip) _____

Social Security Number: _____

Phone Number: _____

Name of Employer: _____

Employer's Address: _____

Check One: ☐ Male ☐ Female

Check One: ☐ Married ☐ Single ☐ Divorced

QUESTIONS FOR COST BENEFIT

Definitions for this survey:

Economic benefits are those dollar gains that you can directly attribute to your education as a direct result of the Associate Degree Nursing program taken at MATC.

Economic Costs are those dollar costs that you expended or the dollars lost because you pursued your education at MATC in the Associate Degree Nursing program.

Section I - Benefits

1. What was the starting annual salary before taxes you received in your first position as a registered nurse? _____

2. What is your current annual salary before taxes? _____

3. What is your annual income from other nursing activities you earned this year in addition to the salaries stated in 1 or 2 above?
$ _____ (if none check here ☐)

4. While in school did you receive any scholarships or grants? ☐ Yes ☐ No
If so estimate the average annual income from these sources. $ _____

5. While in school did you receive any Unemployment Compensation $ _____ yearly; Social Security? $ _____ yearly; or other city, State or Federal Subsidy? $ _____ annually.

6. As a student at MATC how much did you earn while in school on part-time or full-time jobs? $ _____

7. Have you taken additional training since leaving MATC which has resulted in an increase in your classification and salary to its present status? ☐ Yes ☐ No
How much was the annual increase? $ _____